



Environmental Consequences

Environmental Consequences of Alternatives

The discussion of environmental consequences, or impacts, is intended to provide an analysis of the effects reasonably expected from the adoption of each alternative. This chapter describes the potential impacts of the General Management Plan alternatives on the affected environment of the park, including lands proposed for boundary expansion, and describes proposed mitigation measures associated with the alternatives.

Impacts were evaluated in this document at a level that would permit decisions about the overall management objectives of each alternative plan. Environmental consequences were evaluated as specifically as possible using Council on Environmental Quality (CEQ) regulations including type, context, duration and intensity. The CEQ implements the National Environmental Policy Act of 1969 (NEPA). Specific actions would require further site-specific environmental assessment in compliance with NEPA and other applicable laws and policies.

STATUTORY REQUIREMENTS

Four primary laws, or statutory requirements guided the development of this EIS:

Antiquities Act of 1906, as amended (16 USC 431-433)

Authorizes the President to declare national monuments, historic landmarks, historic and prehistoric structures and other object of historic or scientific interest.

National Park Service Organic Act of 1916 (16 USC 1-4, et seq.)

To promote and regulate the use of national parks, monuments and reservations, by such means and measures as to conserve the

scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the land in such manner as will leave them unimpaired for the enjoyment of future generations.

The National Historic Preservation Act of 1966, as amended (16 USC 470)

To protect and preserve historic districts, sites and structures and archeological, architectural and cultural resources. Section 106 and Section 110 require consultation with the State Historic Preservation Office and that NPS nominate all eligible resources under its jurisdiction to the National Register of Historic Places.

The National Environmental Policy Act of 1969

Public Law 91-190 established a broad national policy to improve the relationship between humans and their environment, and sets out policies and goals to ensure that environmental considerations are given careful attention and appropriate weight in all decisions of the Federal Government. This is the legislation which requires and guides the preparation of this Environmental Impact Statement.

A listing of additional relevant laws, regulations and policies that guide NPS management of the park is also provided in Chapter 5.

Methodology

Impacts are predicted according to six major categories: cultural resources, natural resources, interpretation and the visitor experience, the socioeconomic environment and infrastructure including transportation and park operations. Cumulative effects, where they have been identified, are then discussed. The finding of each category is summarized in a conclusion. Proposed mitigation measures are presented for impacts on cultural and natural resources in alternatives B, C and D.

For each category of resource, impact descriptions are presented in the following format:

- **Definitions of Intensity Levels.**
This describes the intensity of effects on resources: negligible, minor, moderate or major.
- **Impacts from Alternative A, the No Action alternative.** This provides the baseline for comparison of the impacts from the action alternatives B, C and D.

- Impacts from management prescriptions
Common to all Action Alternatives
- Impacts from Alternative B
- Impacts from Alternative C
- Impacts from Alternative D
- Cumulative Impacts
- Conclusion
- Mitigation

Intensity definitions used for natural resources, socio-economic environment and visitor use and experience are:

Unknown: *impacts can not be predicted*

Negligible: *impacts may occur but their effects are not measurable on the resource*

Minor: *impacts occur and are detectable but would not have any long-term effects on the resource; small short-term impacts are likely*

Moderate: *impacts are detectable and may cause short-term repairable disruptions to the resource*

Major: *impacts are detectable and may have permanent effects to the resource; impacts may be short-term or long-term in duration.*

Intensity definitions used for cultural resources differ according to resource type and will be introduced before each resource topic.

Impairment

The potential for impairment is also considered for each resource, but its definition remains constant: a major, adverse impact to a resource or value whose conservation is:

- (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of

- Petersburg National Battlefield; or
- (2) key to the natural or cultural integrity of the park; or
- (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents.

Cumulative Effects

The Council on Environmental Quality (CEQ) regulations, which implements the National Environmental Policy Act of 1969

Historic District and Petersburg National Battlefield; the National Historic Landmarks form for Five Forks; the Background Information of Petersburg National Battlefield General Management Plan (1998), Major Battles Associated with the Petersburg Campaign (1998), 75 percent draft Petersburg National Battlefield National Register Nomination (1998), List of Classified Structures (1997), Preliminary Assessment of Five Forks (1999), Battlefield Landscape Resource Documentation (1999),



Camp group learning about local resources soldiers might depend on during the war.

(42 USC 4321 et seq.), requires assessment of cumulative impacts in the decision making process for federal projects. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts are considered for both the no-action and action alternatives.

Cultural Resources

Inventories, maps and evaluations from other sources were used for the resource descriptions and used as a base for the assessments including the National Register forms for Appomattox Manor, City Point

Archeological Assessment (1996), Background Information (1998), 50 percent draft Cultural Landscape Report for Crater Battlefield (2000), 50 percent draft Cultural Landscape Report for Federal Left Flank and Fishhook Siege Lines (2000); and the park facilities lists.

The park has an exhaustive library on the Petersburg Campaign and this report used park brochures and program notes whenever possible to summarize the information. The Administrative History of Petersburg National Battlefield (1983) and the Master Plan for Petersburg National Battlefield (1965) have been used to describe management decisions and facility development from the post-Civil War era through the War Department period and to the current NPS management.

Impacts to cultural resources were assessed using §106 of the National Historic Preservation Act and NEPA. Resources were identified and evaluated by:

1. determining the area of potential effects;
2. identifying cultural resources present in the area of potential effects that are listed in or eligible to be listed in the National Register of Historic Places;
3. applying the criteria of adverse effect to affected cultural resources either listed in or eligible to be listed in the National Register; and
4. considering ways to avoid, minimize or mitigate adverse effects.

The Advisory Council for Historic Preservation's regulations requires a determination of either adverse effect or no adverse effect for National Register-eligible cultural resources. An adverse effect occurs whenever an impact alters-directly or indirectly-any characteristic of a cultural resource that qualify it for inclusion in the National Register, including diminishing the integrity of the resource's location, design, setting, materials, workmanship, feeling or association. Adverse effects also include reasonably foreseeable effects caused by the preferred alternative that would occur later in time, be farther removed in distance or be cumulative. A determination of no adverse effect means there is an effect but the effect would not diminish in any way the characteristics of the cultural resource that qualify it for inclusion in the National Register.

Natural Resources

The most current natural resource information available was gathered from available documents, inventory databases and web-site searches. Current resource

information from state and/or federal mapping projects for floodplains wetlands, agricultural soils, etc., was applied by the park's Geographic Information System (GIS) database to park and regional maps.

For each alternative, several topics related to the impact analysis are addressed: environmental justice, energy, and the sustainability and long-term management of the park. The topic of sustainability includes the relationship between short-term uses of the environment and enhancement of long-term productivity; irreversible or irretrievable commitments of resources should the alternative be implemented; and adverse impacts that cannot be avoided should the alternative be implemented.

Because site-specific designs for most actions have not been developed, affected acreage for land-use and vegetation changes and soil disturbance are estimates.

Social and Economic Environment

Local governments and regional planning agencies—Crater Planning District Commission and Tri-Cities Area Metropolitan Planning Organization—supplied information about the community structure, transportation and infrastructure, as well as comprehensive planning documents. Additional information on demographics, economic development and the park's contribution to its economy and quality of life were based on web-site, data bases and local planning information. Interviews with local officials, community leaders and other historic site managers yielded anecdotal information on experiences with the park, the park's current contribution to local economies and potential impacts of the alternatives.

IMPACTS TO CULTURAL RESOURCES

Historic & Designed Landscapes

Definitions of Intensity Levels

Negligible: *Impact is at the lowest levels of detection — barely perceptible and not measurable. For purposes of Section 106, the determination of effect would be no adverse effect.*

Minor: **Adverse impact—***impact would not affect the character defining features of a National Register of Historic Places eligible or listed cultural landscape.*

Beneficial impact—*preservation of character defining features in accordance with the Secretary of the Interior's standards, to maintain existing integrity of the cultural landscape. For purposes of Section 106, the determination of effect would be no adverse effect.*

Moderate: **Adverse impact—***impact would alter a character defining feature(s) of the cultural landscape but would not diminish the integrity of the landscape to the extent that its National Register eligibility is jeopardized.*

Beneficial impact—*rehabilitation of a landscape or its features in accordance with the Secretary of the Interior's standards, to make possible a compatible use of the landscape while preserving its character defining features. For purposes of Section 106, the determination of effect would be no adverse effect.*

Major: **Adverse impact—***impact would alter a character defining feature(s) of the cultural landscape, diminishing the integrity of the*

resource to the extent that it is no longer eligible to be listed in the National Register. For purposes of Section 106, the determination of effect would be adverse effect.

Beneficial impact—*restoration in accordance with the Secretary of the Interior's standards, to accurately depict the features and character of a landscape as it appeared during its period of significance. For purposes of Section 106, the determination of effect would be no adverse effect.*

Alternative A: No-Action

Existing interpretive vistas and the pattern of forested to open fields would be maintained inside the park's boundaries. Vistas and viewsheds which incorporate lands outside the park's boundary would likely eventually be lost as development encroached having a moderate adverse impact.

Impacts Common to All Action Alternatives

The action alternatives would have a moderate beneficial impact on historic and designed landscapes. Expanding the park's boundary to include more of the landscapes associated with the Petersburg Campaign or buffering existing resources will ensure that the park's goal of educating the American people about the Campaign, its causes and impacts is better met.

Alternative B

Moderate beneficial impacts to the park's historic and designed landscapes will result from the proposed boundary expansion. The inclusion of additional battlefield resources will protect not just those resources, but the park's existing resources, and help to enhance the expanded interpretive program proposed under the action alternatives.

Alternative C

While the boundary expansion is not as extensive as in Alternatives B and D, impacts to historic and designed landscapes will be moderately beneficial as the park boundary increases to protect existing resources.

Alternative D

As in Alternative B, Alternative D will have moderate beneficial impacts on historic and designed landscapes.

The inclusion of additional battlefield resources associated with the Petersburg Campaign will enhance existing park resources as well as the interpretive program.

Selected battlefields will be rehabilitated to reflect the 1864/1865 landscape—the patterns of fields to forests will be managed to maintain the historic character—to facilitate visitors' understanding of the events for which this park has been established.

Conclusion

Although the No-Action alternative will have a moderate adverse impact on the park's cultural landscapes of the park, none of the alternatives will have actions that will cause an adverse effect or be considered impairment under Section 106 guidelines.

Historic Structures

This analysis includes earthworks, commemorative resources and monuments, roads and road traces and railroads.

Definitions of Intensity Levels

In order for a structure or building to be listed in the National Register of Historic Places, it must be associated with an important historic context, i.e. possess significance - the meaning or value ascribed to the structure or building, and have integrity of those features necessary to convey its significance, i.e. location, design, setting, workmanship, materials, feeling, and association (see National Register Bulletin #15, How to Apply the National Register Criteria

for Evaluation). For purposes of analyzing potential impacts to historic structures/buildings, the thresholds of change for the intensity of an impact are defined as follows:

Negligible: *Impacts is at the lowest levels of detection—barely perceptible and not measurable. For purposes of Section 106, the determination of effect would be no adverse effect.*

Minor: **Adverse impact—***impact would not affect the character defining features of a National Register of Historic Places eligible or listed structure or building.*

Beneficial impact—*stabilization/preservation of character defining features in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties, to maintain existing integrity of a structure or building. For purposes of Section 106, the determination of effect would be no adverse effect.*

Moderate: **Adverse impact—***impact would alter a character defining feature(s) of the structure or building but would not diminish the integrity of the resource to the extent that its National Register eligibility is jeopardized.*

Beneficial impact—*rehabilitation of a structure or building in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties, to make possible a compatible use of the property while preserving its character defining features. For purposes of Section 106, the determination of effect would be no adverse effect.*

Major: **Adverse impact—***impact would alter a character defining feature(s) of the structure or*

building, diminishing the integrity of the resource to the extent that it is no longer eligible to be listed in the National Register. For purposes of Section 106, the determination of effect would be adverse effect.

Beneficial impact —*restoration in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties, to accurately depict the form, features, and character of a structure or building as it appeared during its period of significance. For purposes of Section 106, the determination of effect would be no adverse effect.*

Alternative A: No-Action

All buildings and structures would be maintained in their current conditions using current management practices.

At City Point, taking no further actions except maintaining the current conditions of Appomattox Manor and its Kitchen/Washhouse, Dairy, Old Smokehouse as well as Grant's Cabin, Bonaccord and Hunter House would have minor adverse impacts on these resources.

There would be negligible impacts to the CCC-era Operations Building in the Eastern Front.

Poplar Grove's Lodge and Stable would have moderate adverse impacts under this no-action alternative as these buildings continue to be uninhabited. This no action alternative will also have moderate adverse impacts on the Utility Building, Bandstand and Cemetery Wall at Poplar Grove National Cemetery. These structures are deteriorated and would require immediate action to be stabilized or preserved.

Taking no action will have moderate adverse impacts on the New Smokehouse, Carriage

House, Gazebo, Bonaccord and Hunter House Garages and Naldara—all at Grant's Headquarters at City Point.

Impacts Common to All Action Alternatives

Under the action alternatives, historic buildings and structures that need attention beyond routine maintenance and stabilization will receive it. Some structures, such as Appomattox Manor and Bonaccord will be rehabilitated to a greater extent in Alternatives C and D to implement plans for a historic house-museum and new visitor contact station, respectively having moderate beneficial impacts both in terms of the physical integrity of the structures and the interpretive program.

Alternative B

With most of the park's staffing and financial resources geared towards preserving battlefield resources inside and outside the park, most historic buildings and structures will be stabilized and preserved. This will not have adverse impacts in regards to the actual resources, but may be seen as having negative impacts for the interpretive program. For example, Appomattox Manor would continue to accommodate both administrative and visitor contact functions.

Alternative C

This alternative proposes to use the park's resources to a much greater extent to animate and bring to life the expanded interpretive themes. Appomattox Manor in City Point would be rehabilitated into a historic house-museum, moving administrative and visitor contact uses to Bonaccord. The rehabilitation would also include the manor out-buildings. All the rehabilitation activities described would have major beneficial impacts to the buildings, structures and the interpretive program.

Bonaccord would be rehabilitated to accommodate visitor services, park administrative needs and potentially a retail sales area. Major beneficial impacts are anticipated to Bonaccord under this alternative.

Rehabilitating the historic CCC-era Operations building in the Eastern Front will have major beneficial impacts on this structure as well as help to fulfill the park's need for additional education and training space.

Alternative D

Same as Alternative C.

Conclusion

There will be no impairments or adverse effects to historic buildings or structures under any of the alternatives.

Earthworks

Alternative A: No-Action

Earthworks that remain under forest cover could experience moderate adverse impacts as a result of storm events that cause trees to uproot. Impacts to earthworks that have been cleared of trees will experience moderate beneficial impacts as current management practices continue to ensure resource protection by preventing erosion.

Impacts Common to All Action Alternatives

The action alternatives stabilize, preserve and maintain earthworks based on slightly different objectives than the No Action Alternative. Some actions call for certain vistas to be cleared or to remain cleared, and others to stay under light forest cover. Other actions seek to return the landscape to its 1864/1865 pattern of forested to open land to foster a better understanding of the battle actions that took place. The action alternatives seek to use the best

available methods for preserving earthworks, including the best seed mix to prevent erosion, selected tree removal and other routine maintenance activities. The action alternatives will have moderate beneficial impacts on the park's earthworks.

Alternative B

With the emphasis of this alternative on the preservation and protection of additional battlefield resources, earthworks will be maintained using current management practices, including maintaining the existing pattern of field to forest and removing trees that threaten integrity. As in the No Action Alternative, these management practices can have moderate beneficial impacts to earthworks that have been cleared of tree and moderate beneficial impacts to earthworks the continue to be under tree cover.

Alternative C

Same as "Common to All."

Alternative D

Rehabilitating selected resources to reflect the 1864/1865 character will help to preserve and protect earthworks as trees are removed from the resource and appropriate planting ensures minimal erosion. There will be moderate beneficial impacts to both the resources and the interpretive program as a result of this rehabilitation.

Conclusion

There will be no impairments or adverse effects to earthwork resources under any of the alternatives.

Roads and Road Traces

Alternative A: No-Action

Existing roads, historic roads and road traces within park boundaries would remain in their current conditions, having minor beneficial impacts. Historic roads outside the park would continue to be threatened by development, essentially deteriorating any historic character traits, potentially having major adverse impacts with adverse effects.

Impacts Common to All Action Alternatives

Expansion of the park's boundary will have minor beneficial impacts on historic roads and road traces.

The park would continue to have little control over those roads and road traces outside of park boundaries.

Alternative B

Same as "Common to All."

Alternative C

Same as "Common to All."

Alternative D

Same as "Common to All."

Railroads

Alternative A: No-Action

Minor beneficial impacts are anticipated to rail line resources within the park's boundary as a result of this alternative.

Impacts Common to All Action Alternatives

Minor beneficial impacts are anticipated to rail line resources within existing park boundaries as a result of the action alternatives.

Alternative B

Same as "Common to All."

Alternative C

Same as "Common to All."

Alternative D

Same as "Common to All."

Archeological Resources

Definitions of Intensity Levels

Certain important research questions about human history can only be answered by the actual physical material of cultural resources. Archeological resources have the potential to answer, in whole or in part, such research questions. An archeological site(s) can be eligible to be listed in the National Register of Historic Places if the site(s) has yielded, or may be likely to yield, information important in prehistory or history. An archeological site(s) can be nominated to the National Register in one of three historic contexts or levels of significance: local, state, or national (see National Register Bulletin #15, How to Apply the National Register Criteria for Evaluation). For purposes of analyzing impacts to archeological resources, thresholds of change for the intensity of an impact are based upon the potential of the site(s) to yield information important in prehistory or history, as well as the probable historic context of the affected site(s):

Negligible: *Impact is at the lowest levels of detection, barely measurable with no perceptible consequences, either adverse or beneficial, to archeological resources. For purposes of Section 106, the determination of effect would be no adverse effect.*

Minor: **Adverse Impact**—*impact affects an archeological site(s) with the potential to yield information important in prehistory or history. The historic context of the affected site(s) would be local. For purposes of Section 106, the determination of effect would be adverse effect.*

Beneficial impact —*preservation of a site(s) in its natural state. For purposes of Section 106, the determination of effect would be no adverse effect.*

Moderate: Adverse Impact—*impact affects an archeological site(s) with the potential to yield information important in prehistory or history. The historic context of the affected site(s) would be state. For purposes of Section 106, the determination of effect would be adverse effect.*

Beneficial impact —*stabilization of the site(s). For purposes of Section 106, the determination of effect would be no adverse effect.*

Major: Adverse Impact—*impact affects an archeological site(s) with the potential to yield important information about human history or prehistory. The historic context of the affected site(s) would be national. For purposes of Section 106, the determination of effect would be adverse effect.*

Beneficial impact —*active intervention to preserve the site. For purposes of Section 106, the determination of effect would be no adverse effect.*

Alternative A: No-Action

Park archeological resources including sites and ruins would be maintained in their current conditions and would continue to be managed using current management practices. Actions to archeological resources under this alternative would have moderate beneficial impacts and no adverse effects.

Impacts Common to All Action Alternatives

Archeological resources will be stabilized and preserved in good condition, preventing loss or damage to these resources. Ethnographic research will be encouraged

under the action alternatives. Minor beneficial impacts will result from the action alternatives.

Alternative B

Same as "Common to All."

Alternative C

Same as "Common to All."

Alternative D

Same as "Common to All."

Ethnographic Resources

Definitions of Intensity Levels

Certain important questions about human culture and history can only be answered by gathering information about the cultural content and context of cultural resources. Questions about contemporary peoples or groups, their identity, and heritage have the potential to be addressed through ethnographic resources. As defined in the National Park Service, an ethnographic resource is a site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it. Some such specific places of traditional cultural use may be eligible for inclusion in the National Register of Historic Places if they meet national register criteria for traditional cultural properties (TCPs). For purposes of analyzing potential impacts to ethnographic resources, the thresholds of change for the intensity of an impact are defined below.

Negligible: *Impact(s) would be barely perceptible and would neither alter resource conditions, such as traditional access or site preservation, nor the relationship between the resource and the affiliated group's body of beliefs and practices. There would be no change to a group's body of beliefs and practices. For purposes of Section 106, the determination of effect on TCPs would be no adverse effect.*

Minor: **Adverse impact**—*impact(s) would be slight but noticeable and would neither appreciably alter resource conditions, such as traditional access or site preservation, nor the relationship between the resource and the affiliated group's body of beliefs and practices. For purposes of Section 106, the determination of effect on TCPs would be no adverse effect.*

Beneficial impact—*would allow traditional access and/or accommodate a group's traditional practices or beliefs. For purposes of Section 106, the determination of effect on TCPs would be no adverse effect.*

Moderate: **Adverse impact**—*impact(s) would be apparent and would alter resource conditions. Something would interfere with traditional access, site preservation, or the relationship between the resource and the affiliated group's beliefs and practices, even though the group's beliefs and practices would survive. For purposes of Section 106, the determination of effect on TCPs would be adverse effect.*

Beneficial impact—*would facilitate a group's beliefs and practices. For purposes of Section 106, the determination of effect on TCPs would be no adverse effect.*

Major: **Adverse impact**—*impact(s) would alter resource conditions. Something would block or greatly affect traditional access, site preservation, or the relationship between the resource and the affiliated group's body of beliefs and practices, to the extent that the survival of a group's beliefs and/or practices would be jeopardized. For purposes of Section 106, the determination of effect on TCPs would be adverse effect.*

Beneficial impact—*would encourage a group's beliefs or practices. For purposes of Section 106, the determination of effect on TCPs would be no adverse effect.*

Alternative A: No-Action

Existing ethnographic resources would remain in their current conditions. Ethnographic information on the people and events associated with the Petersburg Campaign, including Appomattox Manor, would not be further researched and new information would not be incorporated into the interpretive program. Important information that would bring to light and animate this period in history-civilian life, plantation life, social, economic and political realities of the time and the area—would be untold or lost. Taking no further or additional actions to research or expand on ethnographic resources under this alternative can have moderate adverse impacts potentially leading to an adverse effect under current management conditions.

Impacts Common to All Action Alternatives

Ethnographic resources will be stabilized and preserved in good condition, preventing loss or damage to these resources. Ethnographic research will be encouraged under the action alternatives. Minor beneficial impacts will result from the action alternatives.

Alternative B

Same as "Common to All."

Alternative C

Same as "Common to All."

Alternative D

Same as "Common to All."

Monuments & Commemorative Resources

Alternative A: No-Action

There would be minor adverse impacts to existing monuments within park boundaries under this alternative. Current maintenance and management practices would continue.

Poplar Grove National Cemetery would continue to be managed in its current condition. Maintaining the headstones in their current horizontal positions would provide a less than ideal visitor experience and detract from the effect the original design was meant to evoke. Also, not taking action on the cemetery wall would result in further deterioration. Taking no action in Poplar Grove NC would have moderate adverse impacts to the resources and the visitor experience.

Impacts Common to All Action Alternatives

The Eastern Front monuments will not be negatively impacted as a result of any of the action alternatives. The park will continue to enforce NPS policy of not adding new monuments to the park, as this would have a diminishing effect on existing monuments and the landscape.

Poplar Grove National Cemetery will be positively impacted as a result of improvements such as the replacement of cut headstones. The improvements will not just benefit the resources themselves, but will contribute to the overall visitor experience.

Alternative B

Commemorative resources and monuments will continue to be maintained in their current conditions, using current management practices, except for significant features at

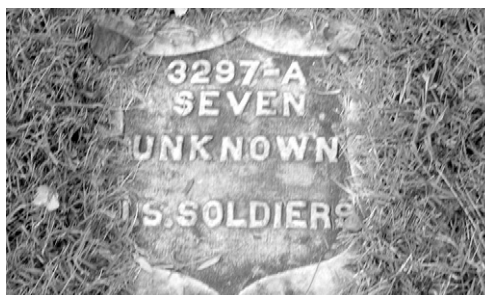
Poplar Grove National Cemetery such as the headstones, which will be repaired and replaced. Actions to monuments under this alternative will have minor beneficial impacts. Actions to Poplar Grove National Cemetery under this alternative will have moderate beneficial impacts.

Alternative C

Replacing the headstones at Poplar Grove and rehabilitating other design features such as the wall will have moderate beneficial impacts on this National Cemetery. The visitor experience will be positively impacted as a result of this alternative. Actions to monuments will be the same as Alternative B.

Alternative D

Poplar Grove National Cemetery will be rehabilitated to so that not just individual design features are repaired or replaced such



as the headstones and wall as in Alternative C, but the cultural landscape setting in its entirety will be addressed. Examples of this rehabilitation might include using appropriate vegetation to shield development, assessing existing vegetation and conducting a management plan. This alternative will have major beneficial impacts on Poplar Grove. Actions to monuments will be the same as Alternative B.

Conclusion

No adverse effects would occur to commemorative resources and monuments as a result of any of the alternatives.

Library, Collections & Archives

Definitions of Intensity Levels

Park library, collections (historic artifacts, natural specimens, and archival and manuscript material) may be threatened by fire, theft, vandalism, natural disasters, and careless acts. The preservation of museum collections is an ongoing process of preventative conservation, supplemented by conservation treatment when necessary. The primary goal is preservation of artifacts in as stable condition as possible to prevent damage and minimize deterioration. For purposes of analyzing potential impacts, the thresholds of change for the intensity of an impact are defined as follows:

Negligible: *Impact is at the lowest levels of detection, barely measurable with no perceptible consequences, either adverse or beneficial, to museum collections.*

Minor: **Adverse impact**—*would affect the integrity of few items in the museum collection but would not degrade the usefulness of the collection for future research and interpretation.*

Beneficial impact—*would stabilize the current condition of the collection or its constituent components to minimize degradation.*

Moderate: **Adverse impact**—*would affect the integrity of many items in the museum collection and diminish the usefulness of the collection for future research and interpretation.*

Beneficial impact—*would improve the condition of the collection or its constituent parts from the threat of degradation.*

Major: **Adverse impact**—*would affect the integrity of most items in the museum collection and destroy the usefulness of the collection for future research and interpretation.*

Beneficial impact—*would secure the condition of the collection as a whole or its constituent components from the threat of further degradation.*

Alternative A: No-Action

The park's library, collections and archival resources would continue to be maintained in their current locations and in their current conditions. The resources not being maintained to conservation—and archival-level standards will continue to deteriorate,



Interior view of parlor, Appomattox Manor.

and diminish opportunities for education, research and preservation of Petersburg Campaign history. The no-action alternative would have moderate adverse impacts on the park's collections and archives.

Impacts Common to All Action Alternatives

Under all the action alternatives, the park's library, collections and archives will be housed in a modern facility and preserved using contemporary conservation practices. A modern facility will prevent those collections that are currently deteriorating from deteriorating further and will also allow greater access for research and exhibition. The action alternatives will have major

beneficial impacts on the park's collections and archives.

Alternative B

Same as "Common to All."

Alternative C

Same as "Common to All."

Alternative D

Same as "Common to All."

Conclusion

The no-action alternative will have moderate adverse impacts to the park's collections and archives, whereas the action alternatives will have major beneficial impacts.

Cumulative Effects on Cultural Resources

Alternative A: No-Action

Alternative A would not take any actions to improve the existing conditions of cultural resources in the park. Actions would be limited to maintaining existing conditions. Resources such as viewsheds and historic road and railroad traces outside of park boundaries would likely be lost to development over time.

The park's boundary and acreage would remain the same, protecting resources within the park, but lacking the ability to protect additional resources outside the park pertaining to the Petersburg Campaign—including lands and vistas that contribute to viewsheds. Earthworks that remain under forest cover would continue to be threatened by uprooted trees from storm events. The conditions of historic buildings, structures and sites would remain the same, with no improvements planned. Commemorative resources, including Poplar Grove National Cemetery would also remain in their current conditions. Poplar Grove elements such as headstones would not be replaced to evoke

the original design. The park's collections and archives that are housed under poor conditions would continue to deteriorate and be inaccessible to the public.

Impacts Common to All Action Alternatives

The action alternatives will have minor to major beneficial impacts on the park's cultural resources. Expanding the park's boundary will help to preserve additional resources pertaining to the siege of Petersburg.



Fort Urmston obscured by trees and vegetation.

Historic and designed landscapes, including vistas and viewsheds will be better preserved by expanding the park's boundaries. Selected earthworks, historic buildings and structures will be preserved and/or rehabilitated, having moderate to major beneficial impacts on those resources as well as the interpretive program.

The action alternatives seek to go beyond stabilizing and maintaining resources to actively preserve and rehabilitate selected resources, better fulfilling the park's mission.

Alternative B

With the emphasis of this alternative on the protection and preservation of additional Petersburg battlefield lands, most resources will continue to be preserved, maintained and stabilized in their current conditions

using current management practices. The addition of battlefield resources will not only ensure their protection, but will also enhance the interpretation and education program. The proposed boundary expansion will have moderate beneficial impacts on the park's existing historic and designed landscapes. The new resources will enhance the interpretive program by protecting additional battlefield resources associated with the Petersburg Campaign. Most of the park's resources—earthworks, historic buildings and

resources in Alternative C will have moderate to major beneficial impacts both on the resources and the interpretation and education program.

Alternative D

Rehabilitated cultural resources will be the means by which visitors understand the complex stories of the Petersburg Campaign. Unlike Alternative C which selects various specific resources to rehabilitate, Alternative D seeks to rehabilitate whole cultural



Rehabilitated earthworks at Confederate Battery Five.

commemorative resources—will be stabilized and preserved. Headstones and other significant features at Poplar Grove National Cemetery will be repaired and replaced, having a moderate beneficial impact on the resources, interpretation and education.

Alternative C

With the emphasis on the park's interpretation and education program, the rehabilitation, repair and replacement of selected cultural resources will enhance the expanded themes and the overall visitor experience. As a historic house-museum, Appomattox Manor will bring to life another aspect of Civil War history. Rehabilitation, replacement and repair of selected cultural

landscapes for the purposes of having the visitor experience that landscape in its entirety. Both Alternatives C and D have strong interpretive programs, but each addresses the expanded themes differently.

With the emphasis of Alternative D on the cultural landscape and bringing the visitor out to experience the park's resources, actions such as the rehabilitation of selected battlefields to reflect the 1864/1865 patterns of fields to forests and rehabilitation of Poplar Grove National Cemetery will have moderate to major beneficial impacts on the resources, the interpretive program and the visitor experience.

IMPACTS TO NATURAL RESOURCES

Methodology and definitions of intensity are described on page 137.

Air Quality

Alternative A—No Action

This alternative would not have a negative impact on air quality.

Impacts Common to All Action Alternatives

Impacts to air quality are expected to be minor. Any construction activity will temporarily increase airborne pollutants. Over the long-term, the action alternatives, which incorporate alternative modes of transportation and improvements to circulation reducing congestion, would have a positive effect in air quality by reducing vehicle emissions. The incorporation of alternative fuel vehicles into park operations and maintenance will also aid in reducing vehicle emissions.

Alternative B

This alternative would not have any additional impact on air quality beyond those discussed as common to all action alternatives.

Alternative C

This alternative would not have any additional impact on air quality beyond those discussed as common to all action alternatives.

Alternative D

This alternative would not have any additional impact on air quality beyond those discussed as common to all action alternatives. Alternative D includes development of a multi-use trail system within the Eastern Front to connect key interpretive sites. Use of alternative means

of travel and an improved circulation system within the site could potentially result in a reduction in vehicle emissions with an associated positive impact on air quality.

Cumulative Impacts

Cumulative impacts are not expected for air quality under any alternative.

Conclusion

Minor impacts to air emissions are expected to be related to any construction activity and would be of a short-term duration. Increased traffic could have an impact on air quality however, use of alternative means of travel, multi-use trail system development and improved circulation among park units could potentially reduce emissions and improve air quality.

Noise and Soundscapes

Alternative A - No Action

Under the No Action Alternative, increased traffic noise and noise from encroaching development adjacent to existing parklands would continue. Impacts from noise on the visitor experience would be minor to moderate depending upon the nature of adjacent land use. Potential land development adjacent to the park in areas of Dinwiddie and Prince George counties proposed as growth areas could represent negative impacts to the quality of the visitor experience from noise.

No additional noise impact to the community would be generated by the park.

Impacts Common to All Action Alternatives

Measurable long-term noise impacts due to increased or changed traffic patterns are unknown at this time. It is not likely that the park's fleet use will change dramatically over time. Additional traffic generated by regional growth may occur on the roads within the

area, which would increase traffic-generated noise.

The inclusion of additional battlefield lands near and around park units would preclude the rate of development encroaching on the park units and the associated traffic and other man-made sounds produced by residential, commercial, and industrial development. Sufficient adjacent acreage around current park boundaries act as a buffer from surrounding incompatible uses and is provided for in each of the action alternatives.

Noise impacts from any construction activity would be minor and short-term in duration. There may be minor shifts in traffic patterns or minor increases in new vehicle trips into the area.

Alternative B

Same as Common to All.

Alternative C

Same as Common to All.

Alternative D

Same as Common to All.

Cumulative Impacts

Since the management prescriptions of the GMP alternatives will not generate additional noise beyond some short term construction impacts, no cumulative impacts are predicted.

Conclusion

Proposed boundary expansions will provide buffers from noise and sound intrusions on the visitor experience. Noise from construction, rehabilitation and restoration work will generally be localized, short-term and of a minor to moderate impact.

Mitigation

Any construction near sensitive land uses such as City Point, or Poplar Grove should be conducted during normal weekday working hours to minimize adverse affects.

Geology, Soils, and Topography

Alternative A - No Action

The bluff overlooking the confluence of the Appomattox and James Rivers at City Point would continue to erode naturally and to collapse. The riprap installed in 1990 to slow erosion would continue to be undercut, resulting in continued slumping of the bank and reshaping of the peninsula. The continued erosion of the bluff at City Point would produce a permanent major impact on the integrity of property and increase the sedimentation rate into the James River affecting the Chesapeake Bay Program agreements regarding sediment loading into the Chesapeake Bay.

Impacts Common to All Action Alternatives

Impacts associated with geology and soils would be derived from short-term minor impacts associated with soil disturbance from routine maintenance, construction, earthwork preservation, and control of erosion. Stabilization of 2,000 feet of the riverbank at City Point would, over the long-term, benefit from the elimination of wave-induced erosion of the point. Controlling erosion would reduce the sediment loading into the James River and would act in accordance with the Virginia Coastal Resources Management Program and the Chesapeake Bay Program.

Continued rehabilitation and management projects on earthworks could be expected to produce short-term soil disturbance resulting in minor impacts to localized areas.

The stabilization of earthworks in the Eastern Front, Western Front, and Five Forks would eliminate soil loss from unofficial trails across the earthworks. Development of a sustainable vegetative cover on the remaining earthworks would eliminate soil loss from periodic tree blow-downs and general erosion from surface run-off. Short-term soil disturbance would result from the initial stabilization process and the relocation of trails at the earthworks, however, long-term beneficial impacts would be expected from controlling erosion and visitor access.

Removal of the old Five Forks visitor contact station and construction of a new facility and trails will cause short-term minor to moderate impacts through soil disturbance.

Alternative B

At City Point the preservation of the landscape and historic gardens of Appomattox Manor, Hunter House, Bonaccord and Naldara would result in short-term impacts through soil disturbance.

Alternative B includes the proposal to protect a total of 7,238 acres (3 acres at City Point, 192 in the Eastern Front, 5,996 in the Western Front and 1,047 at the Five Forks Unit). Protection of additional lands would place nationally significant battlefield resources under protection, preventing adverse impacts to resources that could accompany other types of future development. Management of some vistas as light forest cover and others as open fields, replacement of headstones at the Poplar Grove National Cemetery, and continued preservation management of earthworks would result in short-term soil disturbance on new and existing lands. These activities would result in soil disturbance impacts as outlined in the Impacts Common to All Action Alternatives section of this document.

Alternative C

Alternative C includes rehabilitation of historic vegetation and landscapes at City Point to demonstrate a continuum of uses through time. The expansion of the park boundary by 2,030 acres would protect the park from incompatible land uses adjacent to the existing park units and retain the land as open space.

Alternative C includes the proposal to rehabilitate selected cultural resources such as earthworks and viewsheds. Activities could include rehabilitation of historic road beds at Five Forks, access trail construction, construction activities at Five Forks for a new visitor center and the rehabilitation of the superintendent's lodge at Poplar Grove National Cemetery into a visitor's contact station would create permanent moderate impacts by grading of the local topography.

Tie-in with a proposed Dinwiddie County multi-use trail system would require construction of additional trails and access points resulting in soil disturbance and local topographical changes resulting in short-term minor to moderate impacts to the soils.

At Poplar Grove National Cemetery, rehabilitation could require short-term soil disturbance and movement resulting in minor to moderate impacts to soils.

Alternative D

Impacts to soils under Alternative D are due to soil disturbance from construction and rehabilitation activities and additional actions on new lands within the units. Additional actions include the construction of comfort facilities at Hatcher's Run and Ream's Station, rehabilitation of the 1864-1865 pattern of the landscape, bluff stabilization efforts at City Point, and relocation of NPS facilities away from the main interpretive

arenas. Tie-in with a proposed Dinwiddie County multi-use trail system would require construction of additional trails and access points resulting in soil disturbance and short-term minor-to moderate impacts.

Beneficial impacts through the expansion of the park boundary by a total of 7,238 acres distributed among the park units described for Alternative D would protect park boundaries from incompatible land uses adjacent to the existing park units and retain the land as open space.

Cumulative Impacts

Soil disturbance from activities associated with restoration, rehabilitation and construction would not create cumulative impacts.

Conclusion

Routine maintenance, construction at Five Forks and erosion control would cause periodic short-term minor to moderate impacts to localized areas mainly by soil disturbance.

Mitigation

Mitigation for impacts to geology and soils would include implementation of best management practices (BMPs). BMPs would minimize short-term soil loss and erosion potential along streams and creeks in the activity areas. Soil loss would be mitigated through implementation of appropriate erosion and sediment control measures. The use of BMPs is necessary to prevent additional sedimentation and/or erosion during stabilization activities at City Point.

Prime and Unique Agricultural Lands

Alternative A - No Action

The alternative would have no impact on prime farmlands. Approximately 4,000 acres of prime agricultural lands would be subject to development as commercial/industrial or residential properties in accordance with the land use master plans of the region. The park would continue to provide agricultural leases on about 130 acres of land within the current park boundary.

Impacts Common to All Action Alternatives

NPS boundary expansion of approximately 1,000 acres of prime agricultural land would allow the lands to be kept as open space and in some locations actively farmed through the NPS agricultural leasing program. Field crop mixtures may be changed to reflect the historical pattern of agriculture. The impacts to prime and unique soils under all action alternatives would be of permanent benefit to the area.

Alternative B

In Alternative B, in addition to the 1,000 acres common to all alternatives, 3,000 more acres of prime agricultural lands would be protected as part of the boundary expansion program. Another 1,000 acres of prime agricultural lands would be obtained by the park but these lands are designated as rural conservation zones under the Dinwiddie County Plan and would not be subject to development in any case. The park would gain a total of 5,000 acres of prime agricultural lands under this alternative with a positive impact of increasing protection over 4,000 acres.

Alternative C

Actions to prime farmland under Alternative C would not have any additional impacts than those outlined as common to all action alternatives.

Alternative D

As described under Alternative B, the park would encompass an additional 5,000 acres of prime agricultural lands with a positive impact of increasing protection over 4,000 acres.

In Alternative D, a more aggressive management of prime farmlands could occur as the landscape is restored and maintained in the historic 1864-1865 pattern. The pattern and acreage of land under agricultural production could change as managed under the NPS agricultural leasing program. This will result in permanent beneficial impacts as open space vistas and the agricultural heritage of the region is preserved.

Cumulative Impacts

No cumulative impacts to prime farmlands are expected under the alternatives.

Conclusion

The existing pattern of prime farmland would change to varying degrees among the alternatives. Acreage leased under the agricultural leasing program of the NPS at Petersburg would potentially increase, having a moderate to major beneficial impact on the agricultural heritage of the region. The landscape pattern of forested and open field may change over the long-term, however, the preservation of lands through NPS protection would prevent an additional 1,000 to 4,000 acres of prime lands from being lost to development.

Surface Water Quality

Alternative A - No Action

The present landscape and management practices on park-owned lands would remain the same. The level of impact of sedimentation and erosion is unknown and would occur in very localized areas, to varying degrees and duration based on activity (routine maintenance, construction, road repairs, etc.), lack of action (continued erosion of the City Point bluff), seasonal and meteorological conditions. Water quality of creeks and streams in the park units would



Beaver Pond at Five Forks Battlefield.

continue at their current quality level or possibly experience increased sedimentation rates.

Impacts Common to All Action Alternatives

All action alternatives incorporate the commitment to manage natural systems to maintain a healthy ecosystem. This commitment is expected to include provisions to prevent erosion of trails along streams thus eliminating an impact to water quality. Maintenance of the present landscape and management practices at City Point should result in no change in water quality in rivers and flow entering the Chesapeake Bay.

Short-term moderate impacts to water quality on adjacent streams and creeks are possible from sedimentation during maintenance or construction activities. Clearing or thinning trees for landscape restoration on earthworks will not result in runoff and subsequent degradation of water quality due to deep ditches around forts. The delivery of sediment into a stream from construction activities would be likely until herbaceous vegetative cover is completely established on exposed soils. Permanent loss of shade from tree removal along stream banks may result in increased water temperatures, which would produce long-term or short-term major impacts to aquatic organisms in the water body. Any agricultural leasing activities should incorporate provision for best management practices to prevent impacts to adjacent streams and creeks.

The use of herbicides to eliminate the spread of exotic plant species that could colonize newly disturbed soils may result in water quality degradation and negative impacts to aquatic organisms in and downstream of the rehabilitated areas.

Alternative B

Impacts to water resources under Alternative B are not expected to occur except as outlined in impacts common to all action alternatives.

Alternative C

Impacts to water resources under Alternative C are not expected to occur except as outlined under impacts common to all action alternatives. The broader scope of rehabilitation work under Alternative C could increase the potential and magnitude of impacts to surface water quality.

Alternative D

Impacts to water resources under Alternative D are not expected to occur except as outlined under impacts common to all action alternatives. The broader scope of rehabilitation work under Alternative D could increase the potential and magnitude of impacts to surface water quality.

Cumulative Impacts:

No cumulative impacts to surface water quality are expected from the action alternatives.

Conclusion

Negligible surface water quality impacts could originate primarily from sedimentation and secondarily from vehicular pollutant run-off and clearing along stream banks. Streams and creeks adjacent to parking areas, waysides, construction sites and those in areas under rehabilitation could be negatively impacted. Long-term beneficial impacts to water quality will occur through preservation of vegetated open space, erosion control and vegetation strategies.

Mitigation

Mitigation for impacts to surface waters should not be necessary, provided best management practices are integrated into all activities adjacent to streams and creeks. Mechanisms for replacing vegetative cover after construction or rehabilitation activities should occur as soon as activities end. Any agricultural leasing activities and rehabilitation of agricultural fields to their 1864/1865 patterns should incorporate provision for best management practices to prevent impacts. Smaller trees and shrubs should be allowed to remain along streams to maintain the riparian forest buffer if it were determined that shorter trees would still provide the landscape necessary for interpretation.

Wetlands

Alternative A - No Action

There would not be any impact to wetlands under the No Action Alternative.

Impacts Common to All Action Alternatives

Wetlands are protected from alteration by the Clean Water Act and the Virginia State Water Law. Any management prescription that leads to impacts on wetlands would require a permit and appropriate mitigation before implementation. Long-term impacts of changes to vegetation along stream corridors and in wetlands during rehabilitation of the landscape, particularly when the landscape is returned to the 1864-65 pattern, could result in a decrease in wetland acreage that would have to be mitigated. Alternately, wetlands that existed during the battles of 1864-1865 could be re-created and act as mitigation for wetland loss during other park activities.

Alternative B

The properties proposed for boundary expansion under Alternative B include about 540 acres of wetlands. Of these about 80 acres are at Ream's Station and White Oak Road, designated as Rural Conservation in the Dinwiddie County comprehensive plan. The remaining 460 acres are located on parcels that would be subject to industrial/commercial or residential development. Though any development plan would be required to avoid impacts to wetlands, inclusion within larger preserved lands with the associated benefit of undeveloped buffers is a positive impact to these wetland resources.

Alternative C

In Alternative C, about 100 acres of wetlands would be contained under the protection of the park's boundary expansion with the associated positive impact on this resource.

Alternative D

As described in Alternative B, approximately 460 acres of wetlands would be afforded a greater level of protection when included in the boundary of the park.

Cumulative Impacts

There is no potential for cumulative impacts to wetlands associated with any of the alternatives.

Conclusion

The action alternatives have a potential to provide a positive impact to wetland resources by protecting them within larger undeveloped buffer areas. About 460 acres would be protected under Alternatives B and D. One hundred acres would be protected under Alternative C. Proposals for landscape manipulation should be evaluated to minimize site specific impacts to wetlands. Wetlands in and/or adjacent to areas planned for rehabilitation to the 1864-1865 landscape, rehabilitation of earthworks or construction activities would have to be inventoried and delineated prior to any activities.

Mitigation

Any actions that were to impact wetlands would require a permit from the US Army Corps of Engineers and the Commonwealth of Virginia. Permits would include requirements for specific mitigation in accordance with the no net loss of wetlands policy. Such mitigation could include wetland creation, restoration or enhancement.

Vegetation

Alternative 1 - No Action

Impacts to vegetation under the No Action Alternative would occur with the die-off of existing historical trees and plants in the historical gardens and landscapes at City Point. Negative impacts would continue over the long-term resulting in moderate to major adverse impacts to the historical integrity of the vegetation.

No alterations would be made to park landscapes and vegetation maintenance programs would continue unchanged. Removal of hazard trees and maintenance of existing open fields would also continue unchanged. Current proportions of forested to open lands would remain the same resulting in no adverse impacts to the existing vegetation.

Unauthorized use of trails and creation of social trails would continue resulting in long-term moderate to major adverse impacts to localized vegetation by trampling and erosion.

Agricultural activity and control of exotic species would continue under current management guidelines without any adverse impacts.

Impacts Common to all Action Alternatives

Impacts to vegetation from routine maintenance as well as preservation actions and erosion control could have positive permanent impacts. The preservation of earthworks and forts where gradual removal of trees growing on earthworks and the subsequent management of the earthworks in a younger successional stage would be a major long-term impact to the vegetative community at the site(s).

Changes in vegetation on the earthworks would follow the recommendations outlined in the Review Environmental Assessment and Assessment of Effect for Preservation of Civil War Earthen Fortifications at Petersburg National Battlefield (2001). The establishment of vegetation strategies to eradicate invasive species should be considered a long-term and permanent major positive impact to the areas under management. Soil disturbance could cause colonization or proliferation of exotic species and would be a short-term minor impact assuming management would pursue immediately aggressive eradication programs. These changes would ultimately increase biological productivity of these sites and would therefore be beneficial to biological resources within the park.

Changes in the mix of field crops grown within the Agricultural Leasing Program would be reflective of a desired landscape pattern locally and as such could be defined as a long-term, major impact.

Under the action alternatives, there is a proposal for the expansion of agricultural leasing activities to enhance the natural setting and restore the historic landscape. The resulting agricultural leasing activity would have a beneficial long-term impact to the landscape and in particular would keep the agricultural heritage of Dinwiddie County intact.

The addition of three acres in Grant's Headquarters at City Point would increase the flexibility of site management, generally improving opportunities for landscape integrity. Specimen trees and other plants in the landscaped area at City Point would be maintained in accordance with the goal of stabilizing and preserving the resource, including the gardens at Appomattox Manor.

Alternative B

Alternative B emphasizes preservation of the park's battlefields by expanding the boundary to include important battlefield resources and lands for buffer from potential development. This includes about 1,700 acres of forested land that would otherwise be subject to development under regional growth plans. Under Alternative B, natural succession would continue in 77 percent of the existing park maintained as forest. Pasture, long grass field and mowed lawn would be maintained in the remaining 23 percent of the park. Lands proposed for boundary expansion would primarily protect the resource. Minimal rehabilitation of the landscape is anticipated, except in relation to earthwork management where light forest cover or open field vistas would be maintained. Impacts could occur from soil disturbance during tree removal and would be short-term and minor in effect.

Alternative C

This alternative provides for expanding the current park boundary to include lands to buffer current park battlefields and includes about 500 acres of forested land and 1,500 acres of agricultural or open space.

The clearing of lands surrounding the key elements of the battlefield actions and siege line during rehabilitation and for interpretive access in Alternative C would result in a more open landscape. Vegetation management could consist of tree removal or thinning and invasive species control through removal and/or herbicide applications. Consequently, some forested habitat would be altered to herbaceous vegetation community. Changes to vegetation under Alternative C would not have any additional impacts than those outlined as common to all action alternatives.

Alternative D

As in Alternative B, about 1,700 acres of unprotected forest land would be included in the acquisition lands; however, Alternative D has potential for impacts associated with management of the landscape and the proposed rehabilitation of the 1864/1865 landscape to have a much large scope. Rehabilitation of the landscape to its 1864/1865 pattern by recreating the pattern



Union Fort Sedgwick, 1865.

of forested to open fields would result in a change of the overall vegetation pattern. Portions of lands that are currently open would gradually return to forested habitat; other portions would become open habitat after most recently being forested. Open habitats such as pasture, long grass field and mowed lawn would be maintained in the remaining portion of the park; the agricultural leasing program could be expanded to new lands. Impacts from the large-scale changes to the landscape would be permanent and major. The changes would provide for a more diverse vegetative community over the long-term resulting in a beneficial impact.

New access trail construction would result in the loss of a swath of herbaceous species and trees; impacts would be permanent and moderate in effect. Changes in vegetation would occur at Poplar Grove National Cemetery during rehabilitation to its original design and could also be permanent and of moderate beneficial impact. Rehabilitation of the historic landscape at City Point could include provisions to replace unhealthy or unrepresentative vegetation resulting in a



Treating invasive and exotic vegetation to protect park resources.

long-term beneficial impact to vegetation resources at City Point. The addition of three acres would increase the flexibility of site management, generally improving opportunities for landscape integrity.

Conclusion

The impact of changes to the vegetative communities through the management and preservation of earthworks and the landscape, the eradication of exotic species, and erosion control will have long-term beneficial impacts to the biological productivity of existing and future park lands; diversity of species should increase with landscape and habitat management. Agricultural leasing activities would continue to preserve the rural agricultural heritage of

Dinwiddie County. Alternative B incorporates about 2,300 acres of naturally vegetated land, 1,700 acres of which is otherwise subject to development. Alternative D also includes obtaining these lands but has the potential to increase agricultural use and reduce natural communities in the short term. Alternative C provides for protection of only 500 acres of natural vegetation communities.

Wildlife and Aquatic Life

Alternative A - No Action

No alterations in the landscape would maintain conditions that would continue to favor wildlife species adapted to habitats in urban and suburban settings (e.g. deer, squirrel, sparrows, etc.)

Impacts Common to All Action Alternatives

The proposed boundary expansion of the park to preserve battlefields and key elements would retain acreage as open space, which would be a permanent positive impact on wildlife in general.

The development of conservation partnerships with local, state, and federal agencies will provide management strategies to maximize species and habitat diversity on existing and future park lands. Ecological inventory projects, current and future, will increase knowledge and awareness of the species and habitat diversity on park lands which will in turn aid in the monitoring and protection of park resources. Maximizing species and habitat diversity will cause a major long-term but beneficial impact to park resources.

Construction and rehabilitation activities may cause short-term temporary impacts to water quality in adjacent streams and creeks.

Sedimentation through soil disturbance or erosion would cause minor to moderate impacts to aquatic life in streams, creeks and other adjacent water bodies.

Lands proposed for agricultural leasing would not be significant wildlife habitat but would attract deer, fox, rodents and animals less affected by human activities. An increase in grasslands may increase available habitat for grassland species of birds; succession to forest could increase breeding habitat for other avian species; a long-term beneficial impact to grassland species.



Wildlife survey at Five Forks Battlefield.

Any construction and rehabilitation activities will have short-term minor to moderate localized impacts to wildlife, primarily by disturbance. Permanent loss of or modification to existing habitat types could occur with the construction of new buildings, rehabilitation of viewsheds, and the stabilization of earthworks and fortifications. Changes in habitat will alter species diversity and abundance in the area that could become major long-term impacts.

Ultimately, it is expected that species and habitat diversity would increase as existing and future management strategies and partnerships are activated. Increased diversity of wildlife and aquatic life would become a permanent beneficial impact.

Alternative B

This alternative provides less landscape management and change and as a result the impact on wildlife is minor and short-term primarily related to disturbance during construction and/or rehabilitation activities.



Whitetail deer roam the Eastern Front.

Alternative C

Alternative C impacts to wildlife follow the predicted impacts common to all action alternatives, however, the extent of the impacts would be based on the amount of landscape altered for rehabilitation or placed into agricultural leasing. Ultimately, it is expected that species and habitat diversity would increase as existing and future management strategies and partnerships are activated.

Alternative D

Alternative D provides the potential for the largest change in habitat by the rehabilitation of the final battlefield lands to the 1864-1865 landscape patterns in the Western Front and Five Forks. It is difficult to predict the impact of the proposed vegetation management on particular wildlife species without baseline inventories of the mammals, birds, reptiles, and amphibians in the park. Shifts in animal species composition would be expected to occur with the shifting habitat patterns.

Conclusion

Alternative B places an additional 7,238 acres in permanent protection as open space. Except for current management practices and a limited amount of land management for rehabilitation, habitat for wildlife would continue as it currently exists. Habitats will gradually proceed through succession stages where management is not practiced. Alternative D proposes the same acreage for boundary expansion of the park as C to preserve battlefields and key elements and would keep that acreage as open space, which would be a permanent positive impact on wildlife. In Alternative D more acres of land would undergo management and rehabilitation. The lands proposed for boundary expansion under Alternative C would provide protected wildlife habitat but to a lesser extent than Alternatives B and D.

IMPACTS TO SOCIAL AND ECONOMIC ENVIRONMENT

Definitions of Intensity Levels

Negligible: *Effects to socioeconomic conditions would be below or at the level of detection. There would be no noticeable change in any defined socioeconomic indicators.*

Minor: *Effects to socioeconomic conditions would be slight but detectable. If mitigation is necessary to offset potential adverse effects, it would be simple and successful.*

Moderate: *Effects to socioeconomic conditions would be readily apparent and result in changes to socioeconomic conditions on a local scale. If mitigation is necessary to offset potential adverse effects, it could be expensive but would likely be successful.*

Major: *Effects to socioeconomic conditions would be readily apparent, resulting in demonstrable changes to socioeconomic conditions in the region. Mitigation measures to offset potential adverse effects would be expensive and their success could not be guaranteed.*

Environmental Justice

An assessment as to whether any minority or low-income communities in the park's region of influence may suffer "disproportionately high and adverse human health or environmental effects", revealed that none of the alternatives will negatively impact surrounding communities. Potential positive economic impacts will be discussed in the "Regional and Local Economy" section later in this chapter.

Visitor Use & Facilities

Includes Eastern Front Visitor Center and Park Contact Stations

Definitions of Intensity Levels

Negligible: *Visitors would likely be unaware of any effects associated with implementation of the alternative. There would be no noticeable change in visitor use and experience or in any defined indicators of visitor satisfaction or behavior.*

Minor: *Changes in visitor use and/or experience would be slight but detectable, but would not appreciably limit or enhance critical characteristics of the visitor experience. Visitor satisfaction would remain stable.*

Moderate: *Few critical characteristics of the desired visitor experience would change and/or the number of participants engaging in an activity would be altered. The visitor would be aware of the effects associated with implementation of the alternative and would likely be able to express an opinion about the changes. Visitor satisfaction would begin to either decline or increase as a direct result of the effect.*

Major: *Multiple critical characteristics of the desired visitor experience would change and/or the number of participants engaging in an activity would be greatly reduced or increased. The visitor would be aware of the effects associated with implementation of the alternative and would likely express a strong opinion about the change. Visitor satisfaction would markedly decline or increase.*

Visitor Center

Alternative A: No-Action

There would be no improvements made to the Eastern Front visitor center and it would continue to be perceived as the only visitor center and the Eastern Front as the only unit of the park. The visitor center's lack of adequate meeting and administrative space would continue to under-serve the public and the staff. Moderate adverse impacts would result as a result of this alternative.

Impacts Common to All Action Alternatives

The action alternatives will have minor to major beneficial impacts on the Eastern Front visitor center. Alternative C will expand, improve and enhance the visitor center as part of the enhanced interpretation program. The other action alternatives will make minor improvements to the center.

Alternative B

The Eastern Front visitor center will continue to be the first initial point of contact for visitors. Visitors will be directed to begin their park experience here, with full orientation and interpretation services. The visitor center will continue to be maintained in its current condition, having a minor beneficial impact as brochures and ranger services better orient the visitor to existing park resources.

Alternative C

The improved visitor center will enable a more dynamic interpretive program to be implemented using enhanced media, and a better and bigger presentation space to accommodate larger groups. Major beneficial impacts are anticipated as a result of physical design and interpretive program improvements are made. The improvements will enable a greater number and longer

duration of visits and will also better accommodate the park's administrative and retail needs.

Alternative D

Same as Alternative B.

Contact Stations

Alternative A: No Action

The contact stations at City Point and Five Forks would continue to lack meeting space and adequate comfort facilities. The contact stations at the Western Front and Poplar Grove National Cemetery would continue to be seasonal and lack comfort stations. Minor to moderate adverse impacts would result in this alternative.

Impacts Common to All Action Alternatives

The degree and type of improvements will vary by alternative. Beneficial impacts will range from minor to major.

Alternative B

Appomattox Manor will continue to serve as a visitor contact station for City Point. Improvements such as more data to support broader interpretive themes will have minor beneficial impacts to visitors.

A new visitor contact station at Five Forks and new comfort facilities at the Poplar Grove superintendent's lodge will be provided. Potential moderate to major beneficial impacts will include a greater number as well as longer duration of visits.

Alternative C

In City Point, the Bonaccord rehabilitation will better accommodate visitor services, including orientation and interpretation. Minor to moderate beneficial impacts are anticipated under this alternative. The City of Petersburg (Home Front) and its

partners will provide visitor services and facilities. Here, visitors will be oriented to the city, have the option of going on guided tours and receive more information on local and regional attractions. This alternative has the potential to have major beneficial impacts for the visitor, the city and the park as interpretation and education programs are expanded.

The new visitor contact stations at Poplar Grove and Five Forks will have moderate to major beneficial impacts on the visitor experience, enabling longer more enjoyable visits.

Alternative D

Same as Alternative C.

Cumulative Impacts

Alternative A: No-Action

The visitor center and contact stations will continue to under-serve park visitors and staff. Lack of adequate space for large meetings, school groups and presentations will continue to compromise the park's interpretive program. An opportunity to upgrade the CCC-era building for presentation, meeting and training space will be lost.

Inadequate visitor facilities will continue to shorten visitors' stays, decreasing the overall number of visitors and their support.

Impacts Common to All Action Alternatives

The greatest improvements to the Eastern Front visitor center will be under Alternative C, however all the action alternatives will have beneficial impacts on visitor use and facilities, including contact stations.

Alternative B

Visitor facility improvements or additions will occur in Five Forks and Poplar Grove National Cemetery.

Visitor use-the quality of visitors' experience and the duration of their visits-will increase as improvements and additions are made to selected contact and comfort stations. Moderate to major beneficial impacts will translate into better and longer visitor stays which will benefit the park, and the local and regional economies.



Site now administered by Civil War Preservation Trust

Alternative C

Improvements, rehabilitations and additions to visitor contact stations will positively impact visitors and their experience of the park. Visitors will be able to stay longer and visit more units than they currently do, as well as have a better understanding of the resources that are being preserved and protected by the park. Rehabilitated historic resources and improved visitor amenities will ensure an enjoyable, educational and memorable visitor experience.

Alternative D

Same as Alternative C.

Park Operations

Definitions of Intensity Levels

Negligible: An action would have a no measurable impact to park operations.

Minor: Actions with minor impacts would affect park operations in a way that would prove extremely difficult to measure. To the normal observer, such impacts would not be apparent. This would involve levels of increase in the park's budget and current staffing of less than 10%.

Moderate: Actions with moderate impacts would measurably affect park operations. This would involve levels of increase in the park's budget between 10-30 % and an increase in personnel of 10-30%. Impacts would include providing additional visitor services, protection and emergency response services, facility maintenance, administrative support, and curatorial services.

Major: Actions would significantly affect park operations. This would involve levels of increase in the park's budget of greater than 30% and an increase in personnel of greater than 30%. Impacts would be providing additional visitor services, protection and emergency response services, facility maintenance, administrative support, and curatorial services.

Alternative A: No Action

Current management practices founded on a centralized management approach continue. The law enforcement rangers continue to be centrally dispatched from the current Ranger Office location on Hickory Hill Road. From this location they cover all 2,659 acres of the park. They generally patrol all the lands on a daily basis scattered between the two most distant units, (City Point to Five Forks) and rely on each other for back up and dispatch functions.

Maintenance functions from its centralized location on the Eastern Front. Currently, for continuity, a staff person is dedicated exclusively to the City Point operation, while all others have assignments as tasks and needs dictate. The interpretation division staffs are located in three primary park visitor contact stations year-round and at a fourth (Poplar Grove) in the summer months. Interpretation is located in the Eastern Front Visitor Center, while staff



Repairing the roof at Appomattox Manor.

covers Five Forks and City Point, as report-to duty locations. Programs are offered primarily at the four visitor contact points. Resources Management operates from offices in the park at the Hickory Hill location. From there, staff ranges throughout the park to address resource needs. Administration and management activities emanate from the Hickory Hill address. Most staff meetings, administrative operations, Information Technology activities and management processes are handled here.

Alternative B

Law enforcement activities would increase to meet the expanded demand imposed by

adding 7,238 acres of new battlefields and other properties to the existing 2,659 acres. A larger ranger force will be required and “district” ranger offices will be established. A centralized dispatch operation will be created to service the needs of all field personnel. The maintenance division would also expand its footprint by adding a satellite operation at Five Forks to allow greater responsiveness to the Western Front and Five Forks units. The interpretation operation will expand slightly in this alternative. Additional staff would be hired to staff the expanded Five Forks Battlefield unit. Resource Management operations would expand to meet the needs imposed by the addition of 7,238 new acres of park land. The division will be responsible for RT&E surveys, I&M activities and resource stabilization actions. Administration and management operations will remain unchanged.

Alternative C

The staffing for the law enforcement operation would be greater under Alternative A, but less than that identified under Alternative B. There will be fewer lands to protect under this alternative than in B or D but greater staff and infrastructure assets than in Alternatives A & B. A centralized dispatch operation will operate for 12+ hours daily. The maintenance division will grow even beyond that articulated in Alternative B. The expanded contact station and the new facility at Five Forks would require janitorial services and maintenance staff to meet the operational needs of the park. The interpretative operation will also grow, primarily to staff the new visitor contact facilities. The resources management operation will be reduced from levels envisioned in Alternative B, but still greater than in Alternative A. The administration and

management functions will be increased slightly to meet the needs of the expanded park operations and battlefield preservation partnership activities.

Alternative D

The law enforcement operation would expand to meet the resource protection needs inherent in protecting an additional 7,238 acres of park land spread over a large geographical area and the addition of expanded visitor contact facilities. Furthermore, a 24-hour per day centralized dispatch operation may prove necessary to insure visitor and resource safety. The maintenance operation would also expand to correspond to the maintenance and upkeep needs the additional lands and infrastructure assets will require. A satellite maintenance facility will be required at the Five Forks unit to service all of the Western Front and Five Forks needs. An additional small, mobile janitorial operation would service the visitor contact stations at Poplar Grove National Cemetery, Grant's Headquarters at City Point, and potentially in Old Town Petersburg. The interpretation operation expands to staff and manage visitor contact facilities, provide interpretative programs on the battlefields and host expanded community education programs. The resource management program expands to manage the greater land area, rehabilitate selected landscapes, perform RT&E surveys and continue the I&M program. Administration and management functions also expand to meet the increased needs imposed by more staff and more infrastructure. An assistant superintendent position would be authorized in order to better manage expanded park operations.

Land Use

Alternative A - No Action

The No Action alternative provides for minimal boundary expansion to fill critical buffer requirements. Remaining park perimeters, particularly in areas of dynamic growth, will be subject to visual encroachment of non-compatible land uses. Cultural resource areas will not be protected and will be vulnerable to destruction by land development. Agricultural leasing activities already in place would retain the agricultural character of Dinwiddie County and assist the county in managing land use in keeping with their Comprehensive Plans.

Impacts Common to All Action Alternatives

Boundary expansion varies by alternative. However, the actual impacts to the lands gained are essentially the same across the three action alternatives.

Each of these alternatives provides for preservation or protection of sufficient lands to buffer the park units from the potential visual encroachment of incompatible land use.

All three action alternatives propose the same boundary expansion to buffer park resources in City Point and the Eastern Front. These properties represent 322 acres of land lost to commercial, industrial or residential development.

Alternatives B and D

The protection of approximately 7,000 acres under Alternatives B and D would also protect the most significant cultural resources from impact by future land development. If these lands are not obtained and protected by the park, it is reasonable to assume that a moderate portion of them will eventually be developed. The impacts to

TABLE 5**POTENTIAL FUTURE LAND USE OF BATTLEFIELD BOUNDARY EXPANSION IN DINWIDDIE COUNTY**

Unit/Battlefield	Acres by Alternative			Proposed Development Area
	B	C	D	
Globe Tavern	611	136	611	Urban
Peebles Farm	88	69	88	Urban
Petersburg-Breakthrough	33	0	33	Urban
Boydton Plank Road	99	0	99	Urban
Fort Stedman/Picket Line Attack	799	615	799	Urban
Total Urban	1630	820	1630	
Five Forks	1047	908	1047	Community Planning Area • Dinwiddie County
Jerusalem Plank Road	222	97	222	Community Planning Area • Dinwiddie County
Total Community Planning Area	1269	1005	1269	
Hatcher's Run	1710	0	1710	Quarry
Reams' Station	506	0	506	None-Rural Conservation Area
White Oak Road	1925	0	1925	None-Rural Conservation Area
Total Rural Conservation	2431	0	2431	

future land use are focused in Dinwiddie County. As shown above, 1,630 acres would be lost to potential urban development; this is less than five per cent of the land in the urban development area. 1,269 acres would be lost to development in the community planning area. This is less than three per cent of the community planning area.

These alternatives would also protect 2,431 acres that the county has designated as rural conservation area. While a small percentage of lands would be lost from the developable pool, these alternatives foster the county's goals of retaining its rural character and supporting the preservation of cultural resources.

Alternative C

Alternative C provides the same type of protection for approximately 2,030 acres. It does not include preservation or protection of the 2,431 acres planned as conservation area.

Under this alternative only 840 acres would be lost from the urban development area and 1,005 from the community planning area. This is less than 5% of the pool of land designated as development area.

Cumulative Impacts

Continued development in the region will lead to increasing change in land use from rural and agricultural to commercial, industrial and residential. As noted, of the 7,238 acres being considered for protection

and boundary expansion, all but 2,431 are zoned for some type of development. If these lands adjacent to the current boundary of the park are developed, it could have a major adverse impact on the character of the park.

Fort Lee is expected to be considered for closing when the next round of Base Realignment and Closure (BRAC) reviews begin. If Fort Lee is closed and converted for development following BRAC, it could have significant impacts on the character of the park where it adjoins Fort Lee. Under the No Action Alternative, it is possible that actions by others outside the park could cause major adverse impacts to the aesthetics and character of the park. Alternatives B, C, and D provide some level of protection against these potential impacts, with Alternatives B and D providing the most protection.

Conclusions

The preservation of 2,030 acres (Alternative C) to 7,238 acres (Alternatives B and D) will help retain the current aesthetics of the park by providing a buffer to future development outside the park. Furthermore, they will help retain the rural character of the area. This will help achieve a stated goal of the Dinwiddie County Comprehensive Plan to "preserve a significant portion of the county's productive agricultural and timber lands." The No-Action will leave the park vulnerable to the future actions of others outside the park, potentially resulting in major adverse impacts. Exclusion of these lands from development in the future development areas will have a negligible effect on the ability of the localities to accommodate desired growth.

Mitigation

No mitigation is needed.

Agriculture

Alternative A: No-Action

Under this alternative, no additional agricultural lands would be protected by the park from future development. Agricultural lands around the park would likely be converted for residential and commercial development in the future. This would have a moderate impact on agriculture in the area, potentially resulting in the loss of 6,800 acres of agricultural land. Most of the land proposed for protection and boundary expansion under the action alternatives is rural/agricultural now, yet only 1,600 acres is zoned as rural conservation.

The remaining lands are zoned for development.

Impacts Common to All Action Alternatives

Between 2,030 and 6,800 acres—Alternative C and Alternatives B or D, respectively—of rural agricultural lands would be protected from development. While the amount of land protected varies, the impacts would be similar resulting in retention of the rural character of the land. In addition to the lands preserved by the park, the park would work with the community to promote conservation of lands not currently protected. Crops grown on lands protected by the park may change to comply with NPS policies.

Alternative B

Under Alternative B, approximately 6,800 acres of rural/agricultural lands would be preserved and maintained in the current conditions. That is, agricultural lands would continue as such and there would be no adverse impacts. Minimal changes for interpretation would occur.

Alternative C

Approximately 2,030 acres of rural/agricultural lands would be preserved under this alternative. Only minor changes to land use would occur for interpretive reasons.

Alternative D

Under this alternative nearly 7,238 acres would be acquired or protected. While much of the agricultural land would remain in agriculture, some may be converted to the 1864/1865 landscape. If the park does not protect or acquire these lands, approximately



Living history artillery demonstration.

5,400 are zoned for development and will likely be converted from agriculture to non-agricultural uses in the future. Agricultural lands that are reflective of 1864/1865 may have limitations on the types of crops grown.

Cumulative Impacts

Ongoing development in the region will lead to the loss of some agricultural lands.

Conclusions

All three action alternatives provide some level of protection to agricultural resources. Alternative B provides the most protection, followed by Alternative D, and then C. The No Action Alternative provides no additional protection to agricultural lands. Agricultural lands within the park would continue to be managed as they are now.

Mitigation

No mitigation is needed.

Regional and Local Economy

Alternative A: No-Action

Under the No Action Alternative, no changes would be made to enhance visitor experience or encourage increased visitation. Impacts to the local and regional economy could potentially come from job creation and expenditures by non-local visitors at local businesses (restaurants, hotels, gas, etc). Expenditures by local visitors to the park would likely occur regardless of park visitation.

If visitation were to decline, this could have a negligible to minor adverse impact on the local economy. Visitors to the park spend approximately \$36/party/visit for non-local day users and \$96/party/visit for overnight visitors. It is estimated that visitors to the park contribute approximately \$2 million a year to the local economy. This number could potentially decrease under the No Action Alternative.

Impacts Common to All Alternatives

Each of the action alternatives includes provisions to enhance the park and improve the visitor experience. Improved visitor experience could result in an increase in the length of stay with associated increase in expenditures by visitors (Table 6). If the length of visit were to increase, the number of overnight visitors may increase. Overnight visitors spend nearly 3 times as much as non-local visitors. An increase in the number of overnight visitors could result in a moderate increase in expenditures. Increasing the amount of time non-local day users spend at the park could also increase the average amount spent per party per visit.

TABLE 6
POTENTIAL FUTURE VISITOR EXPENDITURES FOR ALTERNATIVES A, B, C, AND D

Visitor Expenditure	Alternative A No Action	Alternative B	Alternative C	Alternative D
Lodgings	No change	increase	increase	increase
Food	No change	increase	increase	increase
Transportation and Other	No change	increase	increase	increase
Retail	No change	increase	increase	increase
Total	No change	increase	increase	increase

As an indicator of the potential for increased visitation, annual visitation at nearby Civil War parks in Virginia can be compared with Petersburg. Theoretically, visitors to Appomattox Court House and Richmond Battlefield have interests similar to those for visitors to Petersburg. Improvements to Petersburg National Battlefield may entice visitors to the Appomattox Court House and the Richmond National Battlefield to also visit Petersburg. In 2002, there were 255,000 visitors to Richmond National Battlefield and 177,000 visitors to Appomattox Court House. While Petersburg experienced higher visitation, 551,000 in 2002, than the other parks, many visitors to Petersburg are local day users. Visitors from Appomattox Court House and Richmond National Battlefield could include non-local day users and overnight guests that would also appreciate an improvement to the Petersburg experience. These visitors are not local and thus would have the potential to have positive impacts to the local economy.

Implementing the enhancements and improvements under the action alternatives may require additional staff and could have a negligible positive impact on the local economy by providing new jobs.

Alternative B

Under this alternative a new visitor contact station would be developed at the Five Forks Unit. This new visitor contact station will increase visitation to the park, and could cause visitors to extend their length of their stay. Moderate beneficial impacts to local businesses near the new visitor station may occur as a result of increased visitation to these areas. Additions to staff for the new visitor contact station could have a negligible positive impact on the local economy by providing new jobs.

Assuming a value of \$2,500 per acre and a tax rate of \$1.11 per hundred dollars of assessed value (Dinwiddie County), there is a potential loss of approximately \$200,000 to the local tax base.

Alternative C

Under this alternative a new visitor contact station would be developed for the Home Front with the City of Petersburg, for Grant's Headquarters at City Point, and for Five Forks. These new visitor contact stations will increase visitation to the parks, and could cause visitors to extend their length of their stay. Moderate beneficial impacts to local businesses near the new visitor stations

may occur as a result of increased visitation to these areas. Additions to staff for the new visitor contact stations could have a negligible positive impact on the local economy by providing new jobs. Assuming a value of \$2,500 per acre and a tax rate of \$1.11 per hundred dollars of assessed value (Dinwiddie County), there is a potential loss of approximately \$60,000 to the local tax base.

Alternative D

In addition to the benefits of the other action alternatives, there will be increased interaction between the park and the City of Petersburg for the Home Front. Park staff will also work with Dinwiddie County for recreation and trail planning. New facilities resulting from this planning effort could cause minor positive impacts to the local economy near the new facilities. Additional proposed recreation facilities at Grant's Headquarters at City Point could cause increased visitation to this unit also, thereby causing a minor positive impact to the local economy from visitor expenditures.

Alternative D includes the most enhancements for visitor facilities and therefore would have the largest positive impact on the local and regional economy.

Assuming a value of \$2,500 per acre and a tax rate of \$1.11 per hundred dollars of assessed value (Dinwiddie County), there is a potential loss of approximately \$200,000 to the local tax base.

Cumulative Impacts

Some of the programs the park is proposing include partnerships with other local entities, including the City of Petersburg and Dinwiddie County. Efforts by local entities to improve the character of the area for historic visits could further increase visitation to the park and to local attractions, such as the Home Front in Petersburg or new proposed recreation facilities in Dinwiddie County.

Conclusions

Under the No Action Alternative, there would be no positive impacts to the local economy and there is potential for negligible to minor adverse impacts if visitation to the park continues to decline. Each of the action alternatives would have minor to moderate positive impacts to the local and regional economy. Alternative D includes the most enhancements, as well as partnerships with local entities that could further increase visitation to the park and the community. Alternative D will have the most potential for beneficial impacts to the local and regional economy. The potential loss to the tax base is minor compared to the positive economic impact to the travel economy.

Mitigation

Loss of tax revenue can be mitigated by acquisition arrangements that allow the properties to remain on the tax rolls or by payment of in lieu fees. The park intends to allow agricultural easements that would continue property tax payments.

Regional Open Space and Recreational Resources

Alternative A - No Action

Under the No Action Alternative, there would be no changes to open space or recreational resources. No improvements to existing recreational resources would be made.

Impacts Common to All Action Alternatives

Each of the action alternatives includes conservation of open space. This would have a moderate beneficial impact to surrounding communities. Enhancements to interpretive and educational resources would enhance the recreational opportunities offered by the park. The extent of these enhancements vary by alternative, but all would offer some level of enhancement to recreational opportunities. There are no adverse impacts to recreation or open space as a result of the action alternatives.

Alternative B

Alternative B would conserve approximately 7,238 acres of land that is currently rural or agricultural and maintain most of it in the same condition. Enhancements to interpretive and educational resources would cause minor positive impacts to recreational opportunities in the park.

Alternative C

Alternative C would conserve approximately 2,030 acres as open space. Enhancements to interpretive and educational resources would cause minor positive impacts to recreational opportunities in the park.

Alternative D

Alternative D would conserve approximately 7,238 acres of land that is currently rural or agricultural and maintain most of it in the same condition. Additional visitor contact stations and other enhancements represent

major improvements to the recreational resources of the park. Additional improvements proposed by partners of the park to the Home Front and trails in Dinwiddie County provide additional positive impacts to recreational resources in those localities.

Cumulative Impacts

Improvements proposed by partners of the park to the Home Front and trails in Dinwiddie County provide additional



Mounted soldiers at Five Forks Battlefield event.

positive impacts to recreational resources in those localities. Ongoing development in the region will likely decrease the amount of open space, causing adverse impacts to the availability of open space.

Conclusions

The No Action Alternative does not have positive or negative impacts to recreation or open space. The action alternatives each have positive impacts to both open space availability and recreational resources. Alternatives B and D have the same positive impact to open space. Alternative D has the largest positive impact to recreation

Mitigation

No mitigation is needed.

Utilities

Alternative A- No Action

The use and level of service of all utilities would continue as they currently exist.

Alternatives B, C, D

Use of utilities and level of service would increase where new visitor centers or visitor

system of the tour road would continue to contribute to visitors' ending their visit rather than continuing on after a break.

The entries to the Eastern Front would continue to be perceived by most visitors as unsafe.



Hiking trails enhance the visitor experience.

contact stations are created. Mechanisms are in place in all jurisdictional areas for electricity, water supply, natural gas, telecommunications, and solid waste disposal.

Septic systems or wastewater treatment pipelines may have to be constructed wherever visitor centers or contact centers are constructed. Planning should include implementation of adequate systems for expected visitation.

Transportation

Alternative A - No Action

Visitors would continue to use a tour route that is not clearly marked causing confusion about the location of the next battlefield site.

The level and type of use of the park and public roads would remain relatively unchanged. The alignment of the Eastern Front exit onto Crater Road, the complicated traffic patterns between that point and the Eastern Front entrance, and the one-way

Alternatives B, C, D

Transportation impacts, described below, would be common among all the action alternatives.

Tour Route

The potential for the implementation of a regional trail system and regional alternative transportation systems would increase due to developing more extensive partnerships, joint ventures and increasing benefits to individual partners. Both of these actions would provide a new tour experience for the park visitor, one that would be substantially different from the one available to the car-touring public.

Visitors would continue to use the existing complex of public roads, but fewer visitors would get lost due to better orientation at the primary and secondary visitor contact points, and the coordination of signage.

Roads Inside Park Units

The existing access points to the park units would remain unchanged.

Cumulative Impacts

The public infrastructure projects that are planned for the study area largely focus on improved transportation networks including trail systems, roadway improvements and high speed rail. These improvements will work to enhance access to and circulation among Petersburg National Battlefield Fronts. The GMP alternatives for the park recognize these proposals and will benefit from them. The land protection provisions of the GMP alternatives are consistent with community master plans and will further goals of resource protection and agriculture land preservation. The cumulative effects for the region of the action alternatives represent positive impacts.

Unavoidable Adverse Impacts

Unavoidable adverse impacts from implementing any of the alternatives may include short and long-term disturbance and some vegetation loss from construction activities related to new trails, wayside exhibits, car-pull off, roadway improvements and parking areas particularly in regards to Alternatives B and D with expansion of the park's boundary and inclusion of new resources. Implementation of appropriate erosion control and revegetation best practices will be implemented during construction.

Archeological resources may be adversely impacted by development activities. At this time, no known significant archeological resources would be impacted by the improvement or development of amenities related to Alternatives B and D as described

above. If significant archeological resources were found before or during construction activities, the facilities would be relocated or the archeological resources could be excavated to salvage artifacts. Again, best-practices methods would be implemented in regards to any archeological resources found.

Relationship Between Local Short-Term Uses of the Environment and the Maintenance and Enhancement of Long-Term Productivity of the Action Alternatives

NPS is required to describe actions in terms of the NEPA objective to maintain and enhance the long-term productivity of the environment. The action alternatives include numerous elements that would enhance the long-term productivity of the environment.

Locating trails, wayside exhibits, pull-offs and parking areas away from sensitive areas will help protect earthwork and archeological resources as well as natural resources such as rare, threatened and endangered species habitats. Clearing of vegetation for improvements and new construction may allow the opportunity to remove exotic plants and minimize further invasion. Directing visitor use along trails to access special resources such as earthworks and battlefields will minimize degradation of resources and reduce soil erosion and compaction.

The final GMP will provide a guideline for long term management of park resources in concert with the natural and socio-economic environment. Short term impacts to some forested areas where Civil War-era landscapes are to be restored will be offset by long-term preservation of land- some of which will develop into forested lands on balance.

Irreversible and Irretrievable Commitments of Resources of Action Alternatives

An irreversible commitment of resources is one that cannot be changed once it occurs; an irretrievable commitment means that the resource cannot be recovered or reused.



The action alternatives do not entail significant commitment of resources irreversibly. The acquisition and preservation of historically significant lands is consistent with the land use planning goals of local communities. Growth in these communities has been planned considering the value of protecting Petersburg National Battlefield as a resource.

Limited amounts of non-renewable resources would be used for construction projects, including energy and materials. These resources are irretrievable once they are committed.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferred alternative is the alternative selected according to its ability to promote the national environmental policy as expressed in the National Environmental Policy Act (NEPA), sections 101 and 102. A high score received by an alternative during analysis usually means that the alternative would cause the least harm to the biological and physical environment and would best protect, preserve, and enhance historic, cultural, and natural resources. Conversely, a low score for an alternative determines that alternative to have less significance in preserving and protecting cultural and environmental resources.

The mission of Petersburg National Battlefield Park is "to preserve the nationally significant resources associated with the campaign, siege and defense of Petersburg and Poplar Grove National Cemetery, and to provide an understanding of the events and their causes, impacts and legacy to individuals, the community, and the nation in the full context of American History." The draft general management plan for Petersburg National Battlefield outlines four possible alternatives for managing the park's resources. Alternative A, the No Action Alternative, received the lowest score of the four alternatives, based on this alternative's actions and ability to fulfill the NEPA requirements. No Action would continue to maintain but not enhance the park's resources.

Alternative B provides expansion of the park by nearly 7,238 additional acres of battlefield lands containing important historic and cultural resources. Keeping the land as open

TABLE 7
ENVIRONMENTALLY PREFERRED ALTERNATIVE ANALYSIS

NEPA Section 101 & 102 Criteria	Alternatives			
	A	B	C	D
Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.	0	2	1	2
Ensure safe, healthful, productive, and esthetically and culturally pleasing surroundings for all Americans.	1	2	1	2
Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences. Urban	0	1	1	2
Preserve important historic, cultural, and natural aspects of our heritage and maintain, wherever possible, an environment that supports diversity and a variety of individual choices. Urban	1	2	1	2
Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.	1	1	1	1
Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.	0	1	1	1
Total	3	9	6	10

Points: 0: Does not mean criteria; **1:** Somewhat meets criteria; **2:** Fully meets criteria

space under the park's protection provides for the protection of natural resources as well as historic and cultural resources, but does not provide full enhancement of the interpretation and visitor experience, nor does it provide for the restoration and rehabilitation of the new resource lands.

Alternative C allows for the expansion of park boundaries by 2,030 acres to protect the existing resources in the park. In this alternative, interpretation and visitor experience are enhanced and expanded. Key resources are rehabilitated and repaired, however, the alternative does not fully ensure the widest range of beneficial uses of the park's resources. Alternative C also does

not provide for preservation of the currently unprotected major historic battlefield lands.

Alternative D, the environmentally preferred alternative, also provides for the protection of nearly 7,238 acres of battlefield lands and their natural, historic and cultural resources. The preferred alternative includes the rehabilitation and repair of resources and the expansion and enhancement of interpretation and the visitors' experience by using these resources to tell a fuller range of Petersburg stories. In so doing, Alternative D most closely achieves the requirements of sections 101 and 102 of NEPA by best protecting, preserving, and enhancing the historic, cultural and natural resources associated with the Petersburg Campaign.

CARRYING CAPACITY

One of the issues a General Management Plan must address is carrying capacity or visitor capacity. In a report published by the National Recreation and Park Association, carrying capacity is defined as "the supply or prescribed number of appropriate visitor opportunities that will be accommodated in an area". NPS also defines it as "the type and level of visitor use that can be accommodated while sustaining the desired resource and visitor experience conditions in the park."

Identifying management zones will help park staff to monitor and address unacceptable impacts to park resources and visitor experiences. The staff will utilize the final GMP to facilitate the decision-making process to achieve desired resource conditions while balancing for visitors' educational and interpretive experiences. The park will use the best available natural and social science to identify indicators and standards to formulate policy in regards to carrying capacity. The greater the potential for significant impacts or consequences to park resources and values, the greater the level of study and analysis needed to support the decisions.

In Petersburg National Battlefield, carrying capacity has different thresholds and tolerances depending on what unit or park resource is analyzed. Due to the fragile nature of earthworks, access (i.e. walking on them) is prohibited. Therefore carrying capacity will not be analyzed for this resource. In general it is anticipated that except for the Eastern Front visitor center, the park will not exceed carrying capacity for the time covered by this plan.

In action alternatives B and D, carrying capacity will not be an issue for the park for an even longer duration of time as visitors will have significantly more battlefield resources to visit.

The Eastern Front visitor center has already exceeded its carrying capacity. The visitor center is not currently able to accommodate large groups of students for presentations and other educational programs. This issue has been addressed in Alternatives C and D with the redesign of the visitor center in C and a rehabilitation of the CCC-era operations building in both C and D.

Access to earthworks is very controlled and limited. Earthworks are currently being managed to reduce erosion as much as practicable by utilizing proper vegetative cover. To identify the most appropriate vegetative strategy that would meet both resource management and interpretive goals, the NPS is undertaking a comprehensive monitoring program to determine the rates of erosion and the varying benefits of vegetative covers for erosion control, slope stability and interpretation over time. In addition, Petersburg NB has initiated a series of cultural landscape reports to determine the existing conditions and location of the earthworks. The combination of these monitoring efforts and the studies will provide the NPS with the base information to identify the long-term impacts on earthworks in each of the park areas. In addition, the NPS completed an environmental assessment, Preserve Earthen Fortifications, for the earthworks construction project at the Eastern and Western Fronts. The assessment identified management options and impacts for specific sections of the earthworks, and provides long-term guidance for the park.